REMARKS/ARGUMENTS

This response is supplemental to the Substitute Amendment Under 37 C.F.R. § 1.116 filed on June 19, 2007.

The claims in the case are: Claims 1, 4 to 7, 11, 12 and 14 to 20.

As reported in the Advisory Action of June 27, 2007, the provisional rejection of Claims 1 and 7 on the ground of non-statutory obviousness type double-patenting in view of Claims 1 and 4 to 9 of the co-pending application 10/532,202 has been overcome by the terminal disclaimer filed June 7, 2007.

The rejection of Claims 1, 4, 7, 11, 12 and 14 to 16 under 35 U.S.C. § 102(b) as anticipated *Deller et al.*, U.S. 5,776,240, is traversed and reconsideration is respectfully requested. The *Deller* patent is assigned to the same assignee as the present application. The rejection with respect to Claims 2, 3, 8-10 and 13 is moot due to cancellation of those claims.

The express limitation in Claim 1 of this application that the pyrogenically produced silica is "structurally modified" is not shown by *Deller*. Persons skilled in the art understand that a structurally modified silica is a silica that has been subjected to ball milling or equivalent means of structurally impacting the pyrogenically produced silica. This is noted on pg. 5, beginning at line 23 of this application. The *Deller* patent shows granules of silica which have been prepared by dispersing silica in water, spray drying and then optionally heating and/or

silanizing. See the Abstract. The particles typically have an average particle size of 10 to 120 microns and are used for catalyst supports, according to *Deller*. Among the silanizing agents are compounds such as those mentioned in the present application.

In the Advisory Action, the Examiner has said that applicants have not convincingly shown that the process of *Deller* actually works in a way that leads in a direction opposite to what is produced by applicants. Also, the Advisory Action challenges the fact that *Deller* intends to make larger particles from smaller ones which larger particles would then have a higher bulk density and can be used without producing significant dust. To support the facts as stated by applicants herein, there is filed herewith a second declaration by Dr. Meyer, co-inventor in this case. (C.V. to follow).

Dr. Meyer explains on pg. 2 of his Second Declaration that applicants' process goes through the ball milling step to miniaturize the silica particles by destroying the aggregates of the primary particles. Dr. Meyer explains that *Deller* teaches away from the present invention because he makes larger particles from smaller ones. This represents essentially the reverse of what applicants do. It should be noted that Dr. Meyer is a co-inventor in the *Deller* patent and is, therefore, in a position to know and understand what is described in the *Deller* patent.

For a discussion of destructuring and how it comes about to produce a structurally modified metallic oxide filler which is distinctly different from a filler that has not been

destructured, see *Nargiello, et al.*, U.S. 6,193,795, of record. See also U.S. 2002/0077388, U.S. 5,959,005 and U.S. 5,827,363 which are further evidence of the well-recognized meaning of structural modification in silica technology.

As Dr. Meyer points out in his Second Declaration, there is no disclosure of the structurally modified silicas in *Deller*. Neither is there any procedure described in *Deller* that would produce any structural modifications of the silica. The lack of any suggestion or disclosure of structural modification in *Deller* is clearly stated by Dr. Meyer. Applicants respectfully submit that *Deller* fails as a reference under 35 U.S.C. § 102(b) because *Deller* does not show each and every feature of the claimed invention which is required in order to sustain a rejection under 35 U.S.C. § 102(b).

Claim 1 specifies that the silica has been structurally modified by ball milling and possesses a DBP value at least 10% lower than a non-structurally modified silica.

Clearly, *Deller* does not anticipate the claimed invention.

Therefore, withdrawal of the rejection under 35 U.S.C. § 102(b) is respectfully requested.

The rejection of Claims 1, 4, 7 and 11 under 35 U.S.C. § 102(b) as anticipated by *Ettlinger et al.*, U.S. patent 5,665,156 is traversed and reconsideration is respectfully requested. The rejection of Claims 2, 3, 8, 9 and 10 has been rendered moot by the cancellation of these claims. *Ettlinger*, assigned to the same assignee as the present application, describes silanized,

pyrogenically prepared silicas by spraying the silica first with water and then with a silane compound which typically has the formula $(RO)_3SiC_nH_{2n+1}$ in which n is from 10 to 18 and R is alkyl. *Ettlinger* shows that these products are used as thickening agents in liquids, as agents for improving pourability and also as reinforcing agents. See col. 1, lines 9 and 10 as well as col. 3, lines 13 to 19.

However, *Ettlinger* does not disclose structurally modified silicas and, more particularly, structurally modified silicas in lacquers. These silicas can be used as thickening agents in liquids, such as water dilutable paints (see col. 3, lines 4-6).

This thickening effect is based on the characteristic feature of the fumed silica that it agglomerates to larger clusters due to its agglomerated structure having gaps in the clusters.

It is noted that *Ettlinger* is mentioned in applicants' international publication (WO 2004/020531) on pg. 1, lines 8 to 22 and on pg. 11, lines 4-5 as the European equivalent EP 0 672 731.

The difference between the silicas according to *Ettlinger* (U.S. 5,665,156) and the silicas according to the present invention is that the silicas according to the invention are structurally modified after the silanization. Dr. Meyer also confirms that *Ettlinger* does not disclose structurally modified silicas; see pg. 3, first para. of the Second Declaration of Dr. Meyer. It

should be noted that Dr. Meyer is also a co-inventor on the *Ettlinger* patent and, therefore, is in the best position to know what is disclosed and what is not disclosed in the *Ettlinger* patent.

From the example beginning on pg. 11 of applicants' specification (WO 2004/020531) one can see that the silica according to the invention shows no thickening effect but gives a good scratch resistance to lacquer coatings.

In the comparative examples shown in WO 2004/020531, silicas according to the *Ettlinger* are used.

From the Table 7 on pg. 17, one can see that the silica according to *Ettlinger* (comparative silicas 1 and 2) show a good thickening effect, but a low value for the scratch resistance. Dr. Meyer also confirms the thickening effect of the *Ettlinger* products; see pg. 3, second para. of Dr. Meyers' Second Declaration.

In contrast to that the silicas according to the present invention show a low thickening effect, but a good result for the scratch resistance. This is also confirmed by Dr. Meyer on pg. 3, para. 3. The difference could not have been predicted.

Since *Ettlinger* fails to describe a structurally modified silica, the reference does not disclose each and every feature of the claimed invention.

Accordingly, the reference fails to anticipate the claims and, therefore, the rejection should be withdrawn.

The rejection of Claims 1, 4-7, 11, 12 and 14 to 20 under 35 U.S.C. § 103(a) in view of *Deller* or *Ettlinger*, both of record, taken with *Nargiello*, newly cited, U.S. 6,193,795, is traversed and reconsideration is respectfully requested.

Both *Deller* and *Ettlinger* are discussed above and the remarks apply here as well. Dr. Meyer has clearly stated that neither *Deller* nor *Ettlinger* disclose structurally modified silicas.

The Examiner notes that neither *Deller* nor *Ettlinger* disclose that the respective silanised pyrogenically produced silicas are "structurally modified".

Nargiello discloses, in col. 6, lines 1-3, that the method of that document pertains to destructuring of pyrogenic hydrophilic/hydrophobic metal oxides with certain physical-chemical properties. However, *Nargiello* does not describe the specific silicas that are defined in the claims herein.

In respect to the hydrophobizing agents, *Nargiello* refers to four U.S. patents (see col. 6, lines 23 to 28). These U.S. patents disclose the hydrophobizing agents as follows:

U.S. 4,307,023 (*Ettlinger*) uses silicon oil, only (see col. 10, Claim 2). According to the present invention, no silicon oil is used or claimed.

U.S. 3,924,029 (*Schütte)* uses organohalosilane which is a mixture comprising monomethylchlorosilane, dimethylchlorosilane and trimethylchlorosilane (see col. 10, Claim 4).

According to the present invention these silanes do not fall within the scope of the claims.

U.S. 4,503,092 (*Klebe*) uses dimethyldichlorosilane only (see col. 4, Claim 2).

According to the present invention, this silane does not fall within the scope of the claims.

U.S. 4,326,852 (*Kratel*) does not disclose any hydrophobic silica at all.

Thus, *Nargiello* would not direct persons skilled in the art to use silanes defined in applicants' claims herein..

Even if *Nargiello* were to be combined with the principal references the combination would not create *prima facie* obviousness of the subject matter claimed herein.

There is no reason presented in the record herein why a person skilled in the art would select the particular silanes for treatment of a structurally modified, pyrogenically produced silica.

The application has ample data showing that the silanised, structurally modified, pyrogenically produced silicas, when incorporated into lacquers, impart a substantial improvement in scratch resistance to the lacquered surface; see pg. 18, first para. The results are also shown in Table 8 on pg. 20. These beneficial results could not have been predicted from the combination of references.

First of all, neither *Deller* nor *Ettlinger* are directed to lacquer compositions and, therefore, if a person skilled in the art were interested in improving scratch resistance of lacquers, *Deller* and *Ettlinger* would not be viewed as relevant prior art.

Secondly, even *Nargiello*'s destructured silicas would not produce lacquer compositions when incorporated into the compositions of *Deller* or *Ettlinger*.

Clearly, the lacquer compositions of Claims 6, 17 and 18 are not rendered obvious by the combination of references.

Favorable action at the Examiner's earliest convenience is respectfully requested.

Respectfully submitted,

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